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CHRISTIE, PARKER & HALE, LLP 350 WEST COLORADO BOULEVARD SUITE 500 PASADENA, CA 91105			AMINI, JAVID A	
ART UNIT		PAPER NUMBER		2672
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Please find below and/or attached an Office communication concerning this application or proceeding.

14

Office Action Summary	Application No.	Applicant(s)
	09/882,138	DONAHUE ET AL.
	Examiner	Art Unit
	Javid A Amini	2672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 04 December 2003.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-36 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-36 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 13.

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5) Notice of Informal Patent Application (PTO-152)

6) Other: _____.

Response to Arguments

Applicant's arguments filed December 04, 2003 have been fully considered but they are not persuasive.

➤ Applicant on page 4 of remarks lines 4-9 argues, the reference Herman et al. (hereinafter referred as a Herman) teaches the single digital image representation is printed in a single pass, see col. 5, lines 48-50. Examiner's reply: Examiner agrees with Applicant's conclusion from the reference invention. Referring Applicant to fig. 2 of the present invention, an image A` combined with an image B` (two images) will produce a single image as seen. Nevertheless, if Applicant combines the paragraphs before and after of the reference that the Applicant concluded a statement from that. The following paragraphs are formed see col. 5, lines 40-56: [Individual images may be further processed prior to merging to improve their contrast or sharpness or to adjust these characteristics to be similar to the corresponding characteristics of their neighboring images. Enhancement is based on the intensity, color and filtering operations. Parameters of these operations may be determined manually or automatically. In this step, the selected source images are combined into a single mosaic. This is desirably done in a way that yields a result that looks like a single image, without seams or other merging artifacts. Simply copying pixels from the selected regions of each source into the mosaic generally does not yield satisfactory results. The boundary between neighboring segments that differ substantially in such characteristics as contrast, resolution, or color may appear as a visible seam in the mosaic].

- Applicant on page 5 lines 4-6 argues the reference Mayer III et al. (Hereinafter referred as a Mayer) does not disclose a multi-pass printing method. Examiner's reply: Mayer in Figs. 2, 4 and 14 illustrates very clearly the claim invention of the Applicant.
- Applicant on page 5 lines 11-21 argues the references Mayer and Herman do not teach or suggest the multi-pass printing method of claim 19. Examiner's reply: The previous paragraphs described in detail of the claim language, Mary and Herman do teach the multi-pass printing. Applicant should provide the significance of the phrase "the multi-pass printing".
- Applicant on page 5 lines 22-31 argues the claim 22 claims a printing system comprising: a "pixel counter", an "integrator", a "multiplier" and an "intensity modulator". This combination is not taught or suggested by cited referenced. Examiner's reply: These combinations are very obvious; see Herman's Figs. 10-15. And also see Mayer's Figs. 14.
- Applicant on page 6 lines 4-13 argues the Examiner has not identified any structure in the cited references that correspond to the above-quoted elements. Examiner's reply: When a reference (Mayer et al.) introduces a method and apparatus for seamless integration of images using transmissive/reflective mirror, of course, the method comprising: a "pixel counter", an "integrator", a "multiplier" and an "intensity modulator". The obviousness can be seen from Fig. 4, displays which contain number of pixels, integrator, Multiplier and intensity modulator since combining the three images together. The reference Herman

illustrates very clearly in Figs. 3-15, which are corresponding to the above-quoted means.

- Applicant on page 7 lines 7-18 argues the Examiner has rejected the claims 1, 19, 22 and 28 under 35 U.S.C. 112 second paragraph as being indefinite. Applicant discloses that the claimed subject matter is fully supported by the disclosure. For example Fig. 2. And also Applicant discloses there is no statutory requirement that Applicant must claim a specific range of numbers. Examiner's reply: Examiner is not able to see the limitations "ramp value", "first and second rates" and "ramp rate and initial value" in Fig. 2 of the invention. The approach Applicant claimed the above limitations are enveloped the "ramp value", "first and second rates" and "ramp rate and initial value" between $-\infty$ through $+\infty$. Herman in cols. 20-21 lines 62-67 and 1-8 discloses the lower and higher threshold limitations. Therefore, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range." In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).
- For the above reasons, it is believed that the rejections should be sustained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10, 13, 14, 16-23, 25-28, 30-32 and 34-36 rejected under 35 U.S.C. 103(a) as being unpatentable over Herman et al. and further in view of Mayer, III et al.

1. Claim 1.

“A method for combining at least two adjacent image segments to form a larger composite image comprising: establishing a first region in which a first image segment will be printed; establishing a second region in which a second image segment will be printed; defining a buffer region associated with both image segments; printing the first image segment and the buffer region; modifying the intensity in the buffer region by a first ramp value; printing the second image segment and the buffer region; and modifying the intensity in the buffer region by a second ramp value”. Herman et al. teach in (Fig. 1 item 106) image merging, and also in (col. 11, lines 1-10). Herman et al. teach in (col. 6, lines 36-40) and in the abstract, the step of “a first/second image segment will be printed”. Herman et al. teach the step of “a buffer region associated with both image” in Fig. 8 items 830 and 822. Herman et al. teach the step of “modifying the intensity in the buffer region” in (col. 16, lines 1-5), if the registration is poor at the pixel level but image overlap regions can still be identified, step 2 may be modified to optimize the affined transformations to match the color signals and inter-component correlation matrices within the respective overlap regions. Herman et al. Do not explicitly specify first and

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second ramp value in the buffer, however, the step is obvious because the first/second images in the buffer have their addresses and modified by correlating to reference, see Fig. 8 steps 814-834. Mayer, III et al. teach in paragraph (0079) that many additional modifications and variations would be apparent to those skilled in the art. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Mayer II et al. into Herman et al in order to improve their contrast or sharpness or to adjust these characteristics to be similar to the corresponding characteristics of their neighboring images. Enhancement is based on the intensity, color and filtering operations. Parameters of these operations may be determined manually or automatically.

2. Claim 2.

“A method according to claim 1 wherein the image segments are substantially overlapping in the buffer region”. The step is obvious because, Herman et al. teach in Fig. 9 and (col. 1, lines 61-67) that various image-processing methods currently exist for merging source images into a seamless mosaic. The simplest methods digitally feather one image into another by computing a weighted average of the two images within the zone in which they overlap. This method can result in an appearance of double images if the source images are not precisely aligned over entire the overlap region or in a visible but blurred seam, if the two differ significantly in such characteristics as mean intensity, color, sharpness, or contrast.

3. Claim 3.

“A method according to claim 1 wherein the first ramp rate and the second ramp rate are opposite one another”. Herman et al. do not explicitly specify, however, Mayer et al. teach in Figs. 7-8 that the reflected image is coming from above from the monitor 532 facing downward

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towards a transmissive/reflective mirror 536 as opposed to from the bottom with a monitor facing upward. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Mayer II et al. into Herman et al in order to improve their contrast or sharpness or to adjust these characteristics to be similar to the corresponding characteristics of their neighboring images. Enhancement is based on the intensity, color and filtering operations. Parameters of these operations may be determined manually or automatically.

4. Claim 4.

“A method according to claim 1 wherein the intensity in the buffer region sums to substantially full scale”. The step is obvious because, Herman et al. teach in (col. 2, lines 2-5) that more general method of merging images to avoid seams makes use of an image pyramid to merge the images at many different scales simultaneously.

5. Claim 5.

“A method according to claim 1 wherein the buffer region is represented by a number of pixels from the first image segment and a number of pixels from the second image segment”. The step is obvious because, Herman et al. teach the step of “the buffer region is represented by a number of pixels from the first/second image segments”, in (col. 15, lines 57-67) that by adding a constant to each component signal (e.g. R, G & B) in the image, that constant being chosen to remove all negative pixel values. These values are stored in buffer region.

6. Claim 6.

“A method according to claim 1 wherein the printing is done through use of a photosensitive medium and intensity in the buffer region is modified by modulating the amplitude of a beam of

electromagnetic radiation capable of exposing a photosensitive medium.” Herman et al. Do not explicitly specify use of a photosensitive medium. However, Mayer III et al. teach a solution in paragraph 0027, to solve the problem caused by photonic leakage from projectors when overlapping multiple images are used to form a single composite image. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Mayer II et al. into Herman et al in order to improve their contrast or sharpness or to adjust these characteristics to be similar to the corresponding characteristics of their neighboring images. Enhancement is based on the intensity, color and filtering operations. Parameters of these operations may be determined manually or automatically.

7. Claim 7.

“A method according to claim 6 wherein the intensity in the buffer region is modified by modulating the amplitude of a beam of light.” The step is obvious because the amplitude of a beam of light (laser) activates the intensity in the buffer to be modified.

8. Claim 8.

“A method according to claim 6 wherein the intensity in the buffer region is modified by modulating the amplitude of a laser beam.” The step is obvious because the amplitude of a beam of light (laser) activates the intensity in the buffer to be modified.

9. Claim 9.

“A method according to claim 6 wherein the amplitude of the beam is modified by external modulation.” The step is obvious because the amplitude of a beam cannot modulate by itself. Therefore, there is a need for an external or an internal modulation.

10. Claim 10.

"A method according to claim 6 wherein the amplitude of the beam is modified by internal modulation." The step is obvious because the amplitude of a beam cannot modulate by itself. Therefore, there is a need for an external or an internal modulation.

11. Claim 13.

"A method according to claim 1 wherein the printing of the first and second image segments is achieved through a process selected from the group consisting of scanning a photosensitive medium by a rotating polygon, rotating single facet mirror or rotating holographic scanner illuminated by the exposing radiation source." The step is obvious because, Herman et al. teach in (col. 4, lines 12-19) The mosaic construction process begins with a set of source images. These may include "live" images from various types of imaging sensors, such as video cameras, digital still cameras, and image scanners, images from various storage media, such as video tape (VCR), computer files, synthetically generated images, such as computer graphics, and processed images, such as previously constructed mosaics.

12. Claim 14.

"A method according to claim 1 wherein the printing of the first and second image segments is achieved through having a photosensitive medium exposed by a fixed pattern array of individually segmented light sources." The step is obvious because, Herman et al. teach in (col. 4, lines 12-19) The mosaic construction process begins with a set of source images. These may include "live" images from various types of imaging sensors, such as video cameras, digital still cameras, and image scanners, images from various storage media, such as video tape (VCR), computer files, synthetically generated images, such as computer graphics, and processed images, such as previously constructed mosaics.

13. Claim 16.

“A method according to claim 14 wherein the printing of the first and second image segments uses light valves illuminated by a light source.” Herman et al. do not explicitly specify the light valves, but Mayer III et al teach in paragraph 0047 that at least a portion of light from the display areas 503 and 505 typically passes through the mirror face 507, and thus brightness of the images from the display areas 503 and 505 are generally reduced when viewed by the user as reflections on the mirror face 507. The ratio between the passed-through and non-passed-through portions of light depends on the transmissive/reflective characteristics of the mirror face used.

14. Claim 17.

“A method according to claim 14 wherein the printing of the first and second image segments uses micro-mirrors illuminated by a light source.” Herman et al. do not explicitly specify the micro-mirrors, but Mayer III et al teach in paragraph 0047 that At least a portion of light from the display areas 503 and 505 typically passes through the mirror (small) face 507, and thus brightness of the images from the display areas 503 and 505 are generally reduced when viewed by the user as reflections on the mirror face 507. The ratio between the passed-through and non-passed-through portions of light depends on the transmissive/reflective characteristics of the mirror face used.

15. Claim 18.

“A method according to claim 1 wherein the printing of the first and second image segments is achieved through having a photosensitive medium exposed by a fixed pattern array of radiation sources.” The step is obvious because light sources consider as radiation sources.

16. Claim 19.

“A method for creating a buffer region for a composite image comprising: defining the region as a number of pixels extending into any two adjacent image segments; defining a first rate at which the intensity of the pixels in the buffer region will be attenuated across the region in printing a first image segment; and defining a second rate at which the intensity of the pixels in the buffer region will be attenuated across the region in printing a second image segment.”

Herman et al. teach in (Fig. 1 item 106) image merging, and also in (col. 11, lines 1-10).

Herman et al. teach in (col. 6, lines 36-40) and in the abstract, the step of “a first/second image segment will be printed”. Herman et al. teach the step of “a buffer region associated with both image” in Fig. 8 items 830 and 822. Herman et al. teach the step of “modifying the intensity in the buffer region” in (col. 16, lines 1-5), if the registration is poor at the pixel level but image overlap regions can still be identified, step 2 may be modified to optimize the affined transformations to match the color signals and inter-component correlation matrices within the respective overlap regions. Herman et al. Do not explicitly specify first and second ramp value in the buffer, however, the step is obvious because the first/second images in the buffer have their addresses and modified by correlating to reference, see Fig. 8 steps 814-834. Mayer, III et al. teach in paragraph (0079) that many additional modifications and variations would be apparent to those skilled in the art. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Mayer II et al. into Herman et al in order to improve their contrast or sharpness or to adjust these characteristics to be similar to the corresponding characteristics of their neighboring images. Enhancement is based on the intensity, color and filtering operations. Parameters of these operations may be determined manually or automatically.

17. Claim 20.

“A method according to claim 19 wherein the first rate and the second rate at which the intensity of the pixels is attenuated are opposite one another.” Herman et al. do not explicitly specify, however, Mayer et al. teach in Figs. 7-8 that the reflected image is coming from above from the monitor 532 facing downward towards a transmissive/reflective mirror 536 as opposed to from the bottom with a monitor facing upward. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Mayer II et al. into Herman et al in order to improve their contrast or sharpness or to adjust these characteristics to be similar to the corresponding characteristics of their neighboring images. Enhancement is based on the intensity, color and filtering operations. Parameters of these operations may be determined manually or automatically.

18. Claim 21.

“A method according to claim 19 wherein the intensity of the pixels in the buffer region sum to substantially full scale.” The step is obvious because, Herman et al. Teach in (col. 2, lines 2-5) that more general method of merging images to avoid seams makes use of an image pyramid to merge the images at many different scales simultaneously.

19. Claim 22.

“A printing system comprising: a pixel counter; an integrator which outputs an intensity value from an input ramp rate and an initial value; a multiplier which converts digital pixel data and an intensity value into analog data; and an intensity modulator.” Herman et al. teach in (Fig. 1 item 106) image merging, and also in (col. 11, lines 1-10). Herman et al. teach in (col. 6, lines 36-40) and in the abstract, the step of “a first/second image segment will be printed”. Herman et al.

teach the step of “a buffer region associated with both image” in Fig. 8 items 830 and 822. Herman et al. teach the step of “modifying the intensity in the buffer region” in (col. 16, lines 1-5), if the registration is poor at the pixel level but image overlap regions can still be identified, step 2 may be modified to optimize the affined transformations to match the color signals and inter-component correlation matrices within the respective overlap regions. Herman et al. Do not explicitly specify first and second ramp value in the buffer, however, the step is obvious because the first/second images in the buffer have their addresses and modified by correlating to reference, see Fig. 8 steps 814-834. Mayer, III et al. teach in paragraph (0079) that many additional modifications and variations would be apparent to those skilled in the art. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Mayer II et al. into Herman et al in order to improve their contrast or sharpness or to adjust these characteristics to be similar to the corresponding characteristics of their neighboring images. Enhancement is based on the intensity, color and filtering operations. Parameters of these operations may be determined manually or automatically.

20. Claim 23.

“A printing system according to claim 22 wherein the intensity modulator is an amplitude modulator.” The step is obvious because the amplitude of modulator (beam of light or laser) activates the intensity in the buffer to be modified.

21. Claim 25.

“A printing system according to claim 22 wherein the intensity modulator is a phase modulator.” The step is obvious because any type of different modulator has a different phase modulator.

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22. Claim 26.

“A printing system according to claim 22 wherein the intensity modulator is a frequency modulator.” The step is obvious because any type of different modulator has a different speed modulator.

23. Claim 27.

“A printing system according to claim 22 wherein the intensity modulator is a code domain modulator.” The step is obvious because intensity modulator can be considered as a code domain modulator.

24. Claim 28.

“A printing system comprising: means for counting pixels; means for computing an intensity value from a ramp rate and an initial value; means for converting an intensity value and digital pixel data into analog data; and means for modulating intensity.” Herman et al. teach in (Fig. 1 item 106) image merging, and also in (col. 11, lines 1-10). Herman et al. teach in (col. 6, lines 36-40) and in the abstract, the step of “a first/second image segment will be printed”. Herman et al. teach the step of “a buffer region associated with both image” in Fig. 8 items 830 and 822. Herman et al. teach the step of “modifying the intensity in the buffer region” in (col. 16, lines 1-5), if the registration is poor at the pixel level but image overlap regions can still be identified, step 2 may be modified to optimize the affined transformations to match the color signals and inter-component correlation matrices within the respective overlap regions. Herman et al. Do not explicitly specify first and second ramp value in the buffer, however, the step is obvious because the first/second images in the buffer have their addresses and modified by correlating to reference, see Fig. 8 steps 814-834. Mayer, III et al. teach in paragraph (0079) that many

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additional modifications and variations would be apparent to those skilled in the art. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Mayer II et al. into Herman et al in order to improve their contrast or sharpness or to adjust these characteristics to be similar to the corresponding characteristics of their neighboring images. Enhancement is based on the intensity, color and filtering operations. Parameters of these operations may be determined manually or automatically.

25. Claim 30.

“A printing system according to claim 28 wherein the intensity value is computed from a ramp rate and an initial value by an integrator.” Herman et al. do not explicitly specify ramp rate, however, Mayer et al. teach in Figs. 7-8 that the reflected image is coming from above from the monitor 532 facing downward towards a transmissive/reflective mirror 536 as opposed to from the bottom with a monitor facing upward. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Mayer II et al. into Herman et al in order to improve their contrast or sharpness or to adjust these characteristics to be similar to the corresponding characteristics of their neighboring images. Enhancement is based on the intensity, color and filtering operations. Parameters of these operations may be determined manually or automatically (integrator).

26. Claim 31.

“A printing system according to claim 28 wherein the intensity value and digital pixel data are converted into analog data by a Multiplier.” Herman et al. do not explicitly specify analog data, but Mayer III et al. teach in paragraph 0056 the monitor input signals may be analog such as composite video or red, blue, green, sync, or the inputs may be digital such as Digital Visual

Interface (DVI) or the inputs could be optical or other technologies not yet directly anticipated. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Mayer II et al. into Herman et al in order to improve their contrast or sharpness or to adjust these characteristics to be similar to the corresponding characteristics of their neighboring images. Enhancement is based on the intensity, color and filtering operations. Parameters of these operations may be determined manually or automatically (integrator).

27. Claim 32.

“A printing system according to claim 28 wherein a means for modulating intensity is amplitude modulation.” The step is obvious because the amplitude of a beam of light (laser) activates the intensity in the buffer to be modified.

28. Claim 34.

“A printing system according to claim 28 wherein the means for modulating intensity is phase modulation.” The step is obvious because any type of different modulator has a different phase modulator.

29. Claim 35.

“A printing system according to claim 28 wherein the means for modulating intensity is frequency modulation.” The step is obvious because any type of different modulator has a different speed modulator.

30. Claim 36.

“A printing system according to claim 28 wherein the means for modulating intensity is code domain modulation.” The step is obvious because intensity modulator can be considered as a code domain modulator.

Claims 11, 12, 15, 24, 29 and 33 rejected under 35 U.S.C. 103(a) as being unpatentable over Herman et al., Mayer and further in view of Ritchey.

31. Claim 11.

“A method according to claim 6 wherein the amplitude of the beam is modified by acoustic modulation.” Herman et al. do not explicitly specify an acoustic modulation. However, Ritchey teaches in (col. 22, lines 49-52) a voice recognition system operates to translate audible sounds made by the viewer into machine language to control processing functions of the microcomputer. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Ritchey into Herman et al. and Mayer in order to improve panoramic display systems for recording, distribution and display of panoramic scenes which encompass all directions viewable by a viewer.

32. Claim 12.

“A method according to claim 11 wherein the amplitude of the beam is modified by an Acousto-Optic Modulator.” Herman et al. do not explicitly specify an acoustic modulation. However, Ritchey teaches in (col. 22, lines 49-52) a voice recognition system operates to translate audible sounds made by the viewer into machine language to control processing functions of the microcomputer. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Ritchey into Herman et al.

and Mayer in order to improve panoramic display systems for recording, distribution and display of panoramic scenes which encompass all directions viewable by a viewer.

33. Claim 15.

“A method according to claim 14 wherein the printing of the first and second image segments uses a laser beam.” Herman et al. do not explicitly specify a laser beam, but, Ritchey teaches in (col. 28, lines 50-55) that conventional display units such as flat panel 17, cathode ray tube (CRT) 16, or video or laser projector 15 units are incorporated to receive the image segments from each image controller 117a-117f. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Ritchey into Herman et al. and Mayer in order to improve panoramic display systems for recording, distribution and display of panoramic scenes which encompass all directions viewable by a viewer.

34. Claim 24.

“A printing system according to claim 23 wherein the amplitude modulator is an Acousto-Optic Modulator (AOM).” Herman et al. do not explicitly specify an acoustic modulation. However, Ritchey teaches in (col. 22, lines 49-52) a voice recognition system operates to translate audible sounds made by the viewer into machine language to control processing functions of the microcomputer. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Ritchey into Herman et al. and Mayer in order to improve panoramic display systems for recording, distribution and display of panoramic scenes which encompass all directions viewable by a viewer.

35. Claim 29.

"A printing system according to claim 28 wherein the ramp rate is defined as the percentage of modulation per in-scan pixel." Herman et al. do not explicitly specify the ramp rate, however Ritchey teaches in (col. 24, lines 54-58) that the process for performing this type of function is known as "scan conversion and interpolation". Scan conversion is the production of information at a rate different from that at which it is acquired. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Ritchey into Herman et al. and Mayer in order to improve panoramic display systems for recording, distribution and display of panoramic scenes which encompass all directions viewable by a viewer.

36. Claim 33.

"A printing system according to claim 32 wherein the amplitude modulation is accomplished by an Acousto-Optic Modulator." Herman et al. do not explicitly specify an acoustic modulation. However, Ritchey teaches in (col. 22, lines 49-52) a voice recognition system operates to translate audible sounds made by the viewer into machine language to control processing functions of the microcomputer. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Ritchey into Herman et al. and Mayer in order to improve panoramic display systems for recording, distribution and display of panoramic scenes which encompass all directions viewable by a viewer.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

37. Claims 1, 19, 22 and 28 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

38. Claim 1 recites the limitation "ramp value". There is insufficient antecedent basis for this limitation in the claim. Applicant should be able to provide a range of numbers for this limitation.

39. Claim 19 recites the limitations "first and second rates". There is insufficient antecedent basis for this limitation in the claim. Applicant should illustrate how first and second rates defined?

40. Claims 22 and 28 recite the limitations "ramp rate and initial value". There is insufficient antecedent basis for these limitations in the claims. Applicant should be able to provide a range of numbers for these limitations.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Javid A Amini whose telephone number is 703-605-4248. The examiner can normally be reached on 8-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on 703-305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Javid A Amini
Examiner
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Jeffery A. Brier
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